



INTERMOUNTAIN STATION

Central Reference File

No. 3.4162

# RESEARCH NOTES

SOUTHEASTERN FOREST EXPERIMENT STATION

Asheville, North Carolina

Number 76

April 1955

## A CONTROL FOR THE BLACK TURPENTINE BEETLE IN SOUTH GEORGIA AND NORTH FLORIDA

Smithy R.H.

The black turpentine beetle, Dendroctonus terebrans, has caused heavy losses in the South during the past 5 years. Owners and gum producers should be on the watch for it in their pine timberlands this coming season. Inspection of trees at frequent, regular intervals helps an owner to detect the beetle activity in its early stages.

### THE BEETLE ATTACK

The black turpentine beetle's first attacks are almost always made within the basal 18 inches of the tree. These first attacks are seldom numerous, usually less than a half dozen. The attacks are characterized by masses of pitch which appear on the bark surface at the base of the tree. Though this pitch may sometimes be fluid and run down the bark, it is usually quite solid and sticks out from the bark surface. These first few attacks, by themselves, do not kill the tree. The light attacks, the beetle's long life history, and its relative inactivity make it much easier to control than other bark beetles.

When the beetle is first active in a stand, it is confined to a small number of trees, but by the end of the season the beetle may be in 10 to 15 percent of the trees. During any period, the attacks in an area are largely concentrated on those trees which had been attacked in previous months. The beetle has the habit of remaining active in a stand for 2 or 3 years. Trees recently injured by fires, logging, wind, etc., are susceptible to beetle attack, as are turpented trees, especially those with virgin faces installed with a broad axe. Intensively turpented trees growing in dense stands are also more liable to attack.

### LIFE HISTORY OF THE BLACK TURPENTINE BEETLE

The black turpentine beetle also attacks stumps and breeds in them following cutting operations, and is thus able to build up into large numbers. The new broods then attack weakened trees in the vicinity.



LARVA



PUPA

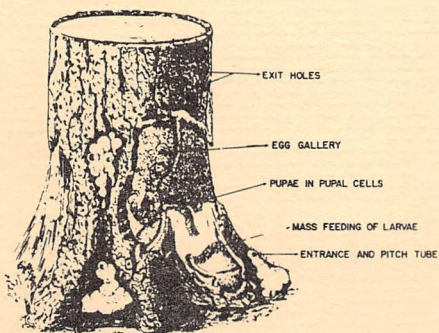


ADULT

It has been found that newly attacked trees may be saved by spraying; the treatment must be applied in the early stages when the attack is light and only a small number of trees are affected. Spraying kills the insect in the tree as well as the beetles which try to attack it. Since beetles continue to fly into an area to reattack, control tends to be very effective.

### THE TREATMENT

The initial step in the treatment is the spotting of trees which have been attacked. One effective spotting method is to give the chipper and dipper a supply of narrow strips of bright-colored cloth each 36 inches long. When an attacked tree is found, a strip is tied around the tree at eye level



INFESTED PINE STUMP

U. S. Department of Agriculture - Forest Service

or higher. The man then reports the presence of bug trees in a general area. Someone is then sent into the area with the spray. The trees can easily be spotted at a distance by the cloth bands. Before spraying, the loose bark and debris is sloughed off to a height of 18 inches or to the highest attack if it is above 18 inches. It is not necessary to cut deeply into the tight bark. There is a heavy accumulation of moss and duff at the base of slash pine in ponds, which should be pushed away before spraying.

The spray is BHC (benzene hexachloride) applied at a concentration of 1-percent gamma isomer in solution in diesel oil. It is most conveniently purchased as an oil concentrate containing 1 pound of gamma isomer per gallon of concentrate. To make the 1-percent solution from this concentrate, add 1 gallon to 14 gallons of diesel oil.

The solution is most easily applied to the tree with a common garden air pressure sprayer. The nozzle of the sprayer should be adjusted so that it produces a cone-shaped spray of small droplets. A misty, fog-like spray is not desirable. A medium air pressure is advisable in order to force the spray into the cracks and crevices of the bark.

The spray is applied to the basal 18 inches of the tree, or higher if there are attacks, until it runs freely down the bark. One gallon of the spray solution will adequately cover the basal 18 inches of about seven 12-inch trees. In applying the spray, hold the nozzle within 4 inches of the bark. Apply the spray until it runs freely down the bark, going around the tree slowly; it is advisable to do this twice. On the second application direct the spray nozzle at the bottom 4 inches and at the ground line. The nozzle is not moved up and down. It is merely held in one position as the man walks around the tree.

The spray may also be used on stumps to control or prevent breeding of the turpentine beetle. It should be applied to the stump section of standing trees just before logging begins or immediately after the tree is cut. The solution is applied as described above.

These precautions must be observed for effective treatment: The spray should not be applied during a rain or to wet bark. After a felled tree is sprayed, it should not be chipped the next two times, in order to give the tree a better opportunity to recover from the effects of the beetle attacks and the spray. The spotting and spraying procedure should be continued as long as the activity of the beetle is noted, i.e., all summer and fall if necessary.

This procedure is used only against the black turpentine beetle, as its attacks are made at the base of the tree. A different approach must be used if the stand is attacked by Ips engraver beetle or the southern pine beetle. Both these beetles attack the full length of the tree, and thus, a spray at the base will not control them.

R. H. Smith  
Entomologist, Lake City, Florida

Agriculture-Asheville